

Date: Wed, 22 Dec 93 04:30:18 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #150
To: Ham-Ant

Ham-Ant Digest Wed, 22 Dec 93 Volume 93 : Issue 150

Today's Topics:

 Antenna Tuner Questions
 Autek RF Analyzer Review
 definition of "matched"
 Gap v Cushcraft
 Grounded tower and antenna tuners
 Help with KLM Beam ???
 Hustler Mobile as Base Antenna (2 msgs)
 need comments on MFJ antennas and accessories (2 msgs)
 Sealant for antenna's connectors (2 msgs)
 Umbrella for 2m HT Antenna
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Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 22 Dec 93 02:06:22 GMT
From: ogicse!cs.uoregon.edu!sgiblab!sdd.hp.com!col.hp.com!srigenprp!
alanb@network.ucsd.edu
Subject: Antenna Tuner Questions
To: ham-ant@ucsd.edu

Cecil Moore (kg7bk@indirect.com) wrote:

: I need the equations governing the
: transfer function of a voltage and/or current balun that is not arcing
: and/or saturating. I can't find them in W2FMI's book, Maxwell's book, or
: any of the ARRL publications that I own. Where the heck are they?

Ideally, the transfer function for a 4:1 balun is $R(\text{load}) = 4 * R(\text{source})$ and $X(\text{load}) = 4 * X(\text{source})$, assuming the load is connected to the "4" side of the balun.

Or perhaps you meant you want to calculate the power-handling capability with high SWR. The easy answer to that question is to assume that a balun designed for the amateur limit can handle 1.5 kW (plus some margin) into a 50 ohm load. The worst-case voltage or current will be multiplied by the square root of the SWR. (High-impedance loads increase the voltage, low-Z loads increase the current.)

The upshot of this is that, under worst-case conditions, the power rating is degraded by a factor equal to SWR. For example, if the SWR is 3:1, you can safely use your 1.5 kW balun at 500 watts without arcing the windings or saturating the core.

AL N1AL

Date: 19 Dec 93 19:51:35 GMT
From: sdd.hp.com!cs.utexas.edu!swrinde!dptspd!ephse!lou@network.ucsd.edu
Subject: Autek RF Analyzer Review
To: ham-ant@ucsd.edu

Somewhere uptopic, somebody asked about the Autek RF Analyzer. Mine just arrived in the mail yesterday. Attached is a summary of its capabilities.

The Autek Research "RF Analyst" (Model RF-1) is a versatile measuring instrument. For systems used between about 1 MHz and 36 MHz, it will measure and display feedline or antenna SWR, impedance ("Z"), "L", and "C". It will also act as a low distortion sine wave generator. No nomograms, tables or calculators need be used. The LCD display shows frequency (MHz), SWR, Z (ohms), L (uH), and C (pF).

The RF-1 is approximately the size of a cigarette package, but twice as thick. The LCD display is about 1 3/4" x 3/4". Controls include seven function selection buttons (ON/OFF, BAND, FREQ, SWR, Z, L and C) and two tuning knobs (TUNE and FINE). Power is supplied by a 9 volt battery, but it may be run from any 7 to 15 volt DC source.

With this device, the manufacturer claims that the user can adjust antenna element lengths, make phased transmission lines, measure cable loss, check baluns, determine the effect of number

of radials on a vertical antenna's performance, tune outboard antenna tuners, measure trap resonant frequency, determine resonant frequency of the proverbial bedspring and/or gutter antennas, as well as measure coils and capacitors.

Published SWR accuracy is between 10% and 20% (with the poorer accuracy at high SWR). Maximum SWR measured is 15:1. Maximum impedance measured is about 2000 ohms, and minimum about 8 ohms.

The RF Analyst comes with a nine page instruction manual, an accessory kit, and a limited one-year warranty. Price range: \$150.

(Usual disclaimers apply. I am neither an employee of Autek Research, nor am I being reimbursed for this review; I'm just a Ham who purchased what thinks he thinks could be a very useful device!)

Lou Genco / N5SGL

--

lou@ephsa.sat.tx.us (Lou Genco)
Rivercity Matrix -- +1 (210) 561-9815/21 -- San Antonio, Texas

Date: Tue, 21 Dec 1993 21:04:48 GMT
From: swrinde!gatech!udel!news.sprintlink.net!direct!news.direct.net!
kg7bk@network.ucsd.edu
Subject: definition of "matched"
To: ham-ant@ucsd.edu

Quoting from the ARRL Antenna Handbook: "A line terminated in a purely resistive load equal to the characteristic line impedance is said to be *matched*...The more that R differs from Z_0 , the greater the mismatch."

Now is this statement from a recent magazine article true or false?

The antenna tuner "tunes out all mismatches in the system, including transmission line to antenna mismatch,..."

Please respond to my Internet address at kg7bk@indirect.com and feel free to include the reasons that you think the statement is true or false.

I'm going to send the results to the author.

Thanks and 73, Cecil, kg7bk@indirect.com

Date: 19 Dec 1993 23:49:29 -0500
From: digex.net!access2!ericr@uunet.uu.net
Subject: Gap v Cushcraft
To: ham-ant@ucsd.edu

I've had a Cushcraft R-5 up 3 feet over my (tin) roof in Washington, DC for three years now, and long for the opportunity to operate below 14 MHz.

Wire antennas for 40 and 80 won't fit (safely, that is) on this city lot, so I'm considering upgrading to a Cushcraft R-7 or the small GAP vertical.

Has anyone compared the two?

Email your answers and I'll compile and post here.

Thanks --
Eric

Eric Rosenberg WD3Q, EI4VPS, ZL0ADG, J20BY, etc.
338 14th Street, NE voice: +202-547-3441
Washington, DC 20002 USA fax: +202-547-3613
ericr@access.digex.com wd3q@amsat.org

Date: Tue, 21 Dec 1993 18:26:10 GMT
From: news.service.uci.edu!usc.edu!hela.iti.org!widener!dsinc!ub!news.kei.com!
sol.ctr.columbia.edu!howland.reston.ans.net!torn!newshost.uwo.ca!julian.uwo.ca!
a1234@network.ucsd.edu
Subject: Grounded tower and antenna tuners
To: ham-ant@ucsd.edu

I would like to thank all those that replied to my query some months ago about feeding a grounded 12 metre tower (that I removed my tribander beam and 15 el two metre beam from because of needed roter repairs.

I bought a homebrew tuner at a local hamfest and rigged a gamma match. I also put up 3 sopers of the lambda/4 variety.

My first contact was on 10.1 with a W5 and nice sigs using the grounded tower. My swr is nearly 1:1 on some frequencies and >3 on other bands . Because I now have a choice of antennas I can work 3.5 to 28 Mhz

with swr nearly 1:1.

Needless to say I left the tower work too late and nearly froze my fingers working last week. I was worth it though.

Many thanks to all those who sent me email.

For those interested in tuners the homebrew one I bought for \$35 includes a roller inductor and two high voltage capacitors, one of which is a two section beast with the sections isolated. The diagram is very similar to the one in the ARRL Handbook.

Best of the holiday season to all

Marv Sherebrin VE3FHX

email: sherebrin@uwovax.uwo.ca

Assoc Professor Medical Biophysics
U Western Ontario

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Date: 21 Dec 1993 04:27:41 GMT
From: pa.dec.com!nntpd.lkg.dec.com!sousa.ako.dec.com!bobseg.enet.dec.com!
segrest@decwrl.dec.com
Subject: Help with KLM Beam ???
To: ham-ant@ucsd.edu

Greetings,

A couple of months back I was wandering through one of the regional ham fests and had the good fortune to pick up a nice looking 440 beam. The fellow that I bought it from said that it was a KLM antenna.

The beam has a 5' long boom with 4'8" between the reflector and further most director elements. There are 9 directors and one reflector. Each element is bolted to the boom through a plastic tee. The boom has been drilled for either horizontal or vertical orientation both at the end and in the middle. The driven element consists of eight half elements cross connect with straps in what I believe (from looking in the RSGB VHF book) is a log-periodic configuration.

Looking in the latest AES catalog I suspect that what I have is a KLM 440-10X beam.

The problem is that I don't know how to hook the coax up to this beast. The two foremost driven half-elements had slightly longer bolts and a second set of nuts. I connect my coax to these two points and I am getting a fairly high (a little over 2:1) SWR.

Is this correct?

The RSGB VHF manual seems to show a loop of wire connecting the back end of the driven element array. There is no loop of this sort on the antenna I have.

If anyone has one of these beams and can tell me how it is supposed to be configured I would very much appreciate some assistance.

Thanks in advance.....

Bob Segrest
KD4PWU

Date: Tue, 21 Dec 1993 14:48:34 -0500
From: titan.ksc.nasa.gov!k4dii.ksc.nasa.gov!user@ames.arpa
Subject: Hustler Mobile as Base Antenna
To: ham-ant@ucsd.edu

In article <CICEBn.Bo6@rd1.InterLan.COM>, tavernin@sun1.interlan.com (Victor Tavernini) wrote:

> I happen to have a Hustler mobile antenna and a 40 meter resonator ...
> and was wondering ... is it possible to use it as a base anteenana?
> If so, would I need to add radials?

Victor-

When you use the Hustler on a car, it is only half of the antenna system. The car's body provides the other half.

If you want to use it as a base antenna, you will need to supply something else to act as the counterpoise or ground plane. If you can't come up with anything, you might consider getting a second mobile antenna, and setting the two up as a dipole.

The company that makes the "Hamstick" antennas, also sells a bracket to mount two Hamsticks as a dipole. The resulting assembly is about 15 feet long, which may fit where a full-size 40 meter dipole won't. I think a pair of Hustlers would work as well, but the Hamstick has a little broader bandwidth. (The bandwidth is narrower on the lower bands.)

If you are restricted to using a compact antenna such as this, it is certainly better than nothing. But don't kid yourself. A full half-wave dipole, or full quarter-wave ground plane with radials, almost certainly will outperform this dipole arrangement on the lower bands.

73, Fred, K4DII

Date: Tue, 21 Dec 1993 21:23:37 GMT
From: swrinde!cs.utexas.edu!howland.reston.ans.net!gatech!udel!news.sprintlink.net!direct!news.direct.net!kg7bk@network.ucsd.edu
Subject: Hustler Mobile as Base Antenna
To: ham-ant@ucsd.edu

Fred McKenzie (fred-mckenzie@ksc.nasa.gov) wrote:
: When you use the Hustler on a car, it is only half of the antenna system.
: 73, Fred, K4DII

Hi Fred, if only it were half of an antenna system I would be happy. I would say it more like a tenth of an antenna system. :-)

73, Cecil, kg7bk@indirect.com

Date: 21 Dec 93 13:57:33 GMT
From: ogicse!emory!europa.eng.gtefsd.com!howland.reston.ans.net!cs.utexas.edu!not-for-mail@network.ucsd.edu
Subject: need comments on MFJ antennas and accessories
To: ham-ant@ucsd.edu

I need a 2m mobile antenna and like to get comments about the MFJ 5/8 wave magnet mount antenna MFJ-1728B (\$25).

Also, is the MFJ J Pocket Rollup antenna any good (\$15)?

how about telescopic antennas for HT (MFJ-1714, \$17) ? how does this compare to the AEA hot rod (\$25) ?

are the MFJ speaker mikes for HTs good ?

please email replies if possible.
thanks in advance.

happy holidays

jerry

Date: 21 Dec 93 13:53:12 GMT
From: ogicse!emory!europa.eng.gtefsd.com!howland.reston.ans.net!cs.utexas.edu!not-for-mail@network.ucsd.edu
Subject: need comments on MFJ antennas and accessories
To: ham-ant@ucsd.edu

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please email replies if possible.
thanks in advance.

happy holidays

jerry

Date: 21 Dec 93 17:53:10 GMT
From: ogicse!emory!darwin.sura.net!fconvx.ncifcrf.gov!mack@network.ucsd.edu
Subject: Sealant for antenna's connectors
To: ham-ant@ucsd.edu

In article <thweatt.756429935@mustang18> thweatt@rtsg.mot.com (John A. Thweatt) writes:

>I am going to be installing some 9913 cable with silver-plated
>connectors this weekend. It was recommended to me that I should
>assure that a proper seal was between the connector and cable by
>using 3M #23 self vulcanizing rubber tape, a layer of Schotchkote,
>followed by another layer of #23. He also recommended that I
>avoid Coax Seal. I would like to assure that I don't have any
>moisture problems in this cable so I would like to follow this suggestion
>but I can't find a vendor in the Chicago (Northwest Chicago area) which
>has this 3M product. Does anyone know where I can get this for my weekend
>installation project? Is there another type of tape which I could use
>which would provide as much or more protection? Radio shack sells Archier
>brand rubber tape, would this work as well??? I spent good money on this
>cable and don't want it damaged within a few years, so I want to do as

>much as possible to safeguard against these problems.

>

>Also I measured the loss of this complete 85 feet of cable with silver-plated
>connectors and obtained 2.54 db loss at 900MHz, .8 db loss at 100MHz, and
>2.7 db at 999MHz. Can't wait to try it out.

>

>Thanks,

>John T.

>

I'm impressed with your (lack of) loss at 900Mhz - I thought 1/2" hardline was
3db at 1296.

I don't know where this tape is, but I put a sleeve of heatshrink on the outside
of

the coax before I install the connector - this shims the coax out to make the
connector snug. I also put a plastic boot on the coax to slide
over the connector when I'm done. After installing the connector and
before sliding the boot up - I put silicone glue II (not regular which
gives off acetic acid when it cures) around the join of the coax and the
connector.

After I couple the connectors together I cover them with movie Si glue II.
When you want to disassemble the connectors you can peel the Si glue off .
Works great.

Joe NA3T

macck@ncifcrf.gov

>

>

>

Date: 20 Dec 93 23:25:35 GMT

From: news.service.uci.edu!usc.edu!news.isi.edu!headwall.Stanford.EDU!agate!
howland.reston.ans.net!cs.utexas.edu!asuvax!ennews!mcdphx!schbbs!mothost!
delphinium.cig.mot.com!mustang18!thweatt@network

Subject: Sealant for antenna's connectors

To: ham-ant@ucsd.edu

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Also I measured the loss of this complete 85 feet of cable with silver-plated connectors and obtained 2.54 db loss at 900MHz, .8 db loss at 100MHz, and 2.7 db at 999MHz. Can't wait to try it out.

Thanks,
John T.

Date: Sun, 19 Dec 93 15:07:15 PST
From: yeshua.marcam.com!zip.eecs.umich.edu!destroyer!nntp.cs.ubc.ca!mala.bc.ca!oneb!ham!emd@uunet.uu.net
Subject: Umbrella for 2m HT Antenna
To: ham-ant@ucsd.edu

R0264@vmcms.csuohio.edu writes:

> Anybody ever try an umbrella for a 2m HT antenna? I guess a 1/4 wave
> radiating element could be stuck up from the top and the spreaders trimmed
> for radial elements. What else would be needed? Phil, aa8jo.

Yes. It worked fine. I used to do a lot of parades, etc and it seemed to rain a lot, so an umbrellatenna seemed a logical choice.

Don't worry about trimming the spreaders. Just find a way to mount a BNC on the top of the antenna - I used an old nutdriver shaft to mount the BNC in - and feed the coax down through the handle. I used the real thin 50 ohm cable - can't remember the RG number - and though it's lossier than say, RG58, it's only a few feet long so what the hey?

Then I just snapped on a 1/4 wave BNC to the top of the antenna. If I was real close, I could use the rubber duck, and even 5/8 if needed. The umbrella certainly seemed to provide as good a ground plane as the radio.

Oh, and DON'T use a collapsable handle type umbrella, far too much hassle to deal with the coax.

Robert Smits
VE7EMD
Ladysmith B.C.
e-mail: emd@ham.almanac.bc.ca

There is *no* idiotproof filter.
Idiots are proof against anything!
- Richard Chycoski, VE7CVS

Date: 21 Dec 93 16:15:06 GMT
From: news-mail-gateway@ucsd.edu
Subject: unsub
To: ham-ant@ucsd.edu

unsub rontiver.ub.ub.com at smtp1ink-ub@ccmail

End of Ham-Ant Digest V93 #150

